Nichols Consulting Engineers, Chtd.
1885 S. Arlington Ave., Suite 111
Reno, Nevada 89509
(775) 329-4955

Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	7/29/2011					
Engineer	Jack Norberg					
Project	Homewood Mountain Resort - Winter Calculations					
Watershed	Existing Conditions WS-5					
Area (acres)	5.4	Elevation (ft)	7408	Return Period (years)	100	
	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.19	0.4			14.04
Collector 1	616	0.23	0.1	5.4	15	1.81
Collector 2						
Collector 3						
					Total Response Time (minutes)	15.85
					Unit Peak Flow (cfs/acre)	1.90
					Infiltration Rate (in/hr)	0.26
					Infiltration Factor (cfs/acre)	0.31
					Percent Impervious	90
Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor						**10.13**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	7/29/2011
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Winter Calculations
Watershed	Existing Conditions WS-6

Area (acres)	2.2	Elevation (ft)	7565	Return Period (years)	100

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	100	0.30	0.4			4.66
Collector 1	401	0.07	0.1	2.2	15	2.32
Collector 2						
Collector 3						

Total Response Time (minutes)		6.98
Unit Peak Flow (cfs/acre)		2.60
Infiltration Rate (in/hr)	0.26	
Infiltration Factor (cfs/acre)	0.31	
Percent Impervious	90	
Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor		**5.73**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	7/29/2011
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Winter Calculations
Watershed	Existing Conditions WS-7

Area (acres)	145.7	Elevation (ft)	7465	Return Period (years)	100

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.18	0.4			14.26
Collector 1	4308	0.27	0.1	145.7	15	5.24
Collector 2						
Collector 3						
					Total Response Time (minutes)	19.50
					Unit Peak Flow (cfs/acre)	1.70
					Infiltration Rate (in/hr)	0.28
					Infiltration Factor (cfs/acre)	0.33
					Percent Impervious	90

Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor	**242.81**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	7/29/2011
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Winter Calculations
Watershed	Proposed Conditions WS-1

Area (acres)	28.3	Elevation (ft)	6702	Return Period (years)	100

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	516	0.23	0.4			13.46
Collector 1	1942	0.38	0.1	20.7	15	3.36
Collector 2	1051	0.06	0.025	24.5	1	0.74
Collector 3						
					Total Response Time (minutes)	17.56
					Unit Peak Flow (cfs/acre)	1.65
					Infiltration Rate (in/hr)	0.15
					Infiltration Factor (cfs/acre)	0.18
					Percent Impervious	90

Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor	**40.02**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

* The last collector area assumes a 50% reduction in the proposed development area due to stormwater runoff that is mitigated by proposed onsite stormwater infiltration devices.

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	7/29/2011
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Winter Calculations
Watershed	ProposedConditions WS-2

Area (acres)	42.4	Elevation (ft)	6645	Return Period (years)	100

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.27	0.4			12.63
Collector 1	1853	0.33	0.1	28.2	15	3.12
Collector 2	1344	0.05	0.04	33.7	15	2.30
Collector 3	707	0.01	0.025	38.1	1	1.09
					Total Response Time (minutes)	19.15
					Unit Peak Flow (cfs/acre)	1.55
					Infiltration Rate (in/hr)	0.26
					Infiltration Factor (cfs/acre)	0.32
					Percent Impervious	90
Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor						**57.77**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

* The last collector area assumes a 50% reduction in the proposed development area due to stormwater runoff that is mitigated by proposed onsite stormwater infiltration devices.

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	7/29/2011					
Engineer	Jack Norberg					
Project	Homewood Mountain Resort - Winter Calculations					
Watershed	Proposed Conditions WS-3					
Area (acres)	10.0	Elevation (ft)	6593	Return Period (years)	100	
	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.18	0.4			14.36
Collector 1	1647	0.30	0.1	8.6	15	3.86
Collector 2	581	0.07	0.11	9.2	1	1.52
Collector 3						
					Total Response Time (minutes)	19.74
					Unit Peak Flow (cfs/acre)	1.45
					Infiltration Rate (in/hr)	0.27
					Infiltration Factor (cfs/acre)	0.33
					Percent Impervious	90
Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor						**13.08**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

* The last collector area assumes a 50% reduction in the proposed development area due to stormwater runoff that is mitigated by proposed onsite stormwater infiltration devices.

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	7/29/2011
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Winter Calculations
Watershed	Proposed Conditions WS-4

Area (acres)	67.4	Elevation (ft)	6652	Return Period (years)	100

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.18	0.4			14.26
Collector 1	2448	0.26	0.1	57.5	15	3.81
Collector 2	1456	0.04	0.02	64.8	3	0.93
Collector 3						
					Total Response Time (minutes)	19.00
					Unit Peak Flow (cfs/acre)	1.58
					Infiltration Rate (in/hr)	0.51
					Infiltration Factor (cfs/acre)	0.62
					Percent Impervious	90

Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor	**98.43**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

* The last collector area assumes a 50% reduction in the proposed development area due to stormwater runoff that is mitigated by proposed onsite stormwater infiltration devices.

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	7/29/2011
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Winter Calculations
Watershed	Proposed Conditions WS-5

Area (acres)	5.4	Elevation (ft)	7408	Return Period (years)	100

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.19	0.4			14.04
Collector 1	631	0.22	0.1	4.8	3	1.32
Collector 2						
Collector 3						
					Total Response Time (minutes)	15.36
					Unit Peak Flow (cfs/acre)	1.75
					Infiltration Rate (in/hr)	0.22
					Infiltration Factor (cfs/acre)	0.26
					Percent Impervious	90

Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor	**8.34**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

* The last collector area assumes a 50% reduction in the proposed development area due to stormwater runoff that is mitigated by proposed onsite stormwater infiltration devices.

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	7/29/2011					
Engineer	Jack Norberg					
Project	Homewood Mountain Resort - Winter Calculations					
Watershed	Proposed Conditions WS-6					
Area (acres)	2.2	Elevation (ft)	7565	Return Period (years)	100	
	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	180	0.32	0.4			6.52
Collector 1	376	0.30	0.22	2.2	3	1.54
Collector 2						
Collector 3						
					Total Response Time (minutes)	8.06
					Unit Peak Flow (cfs/acre)	2.50
					Infiltration Rate (in/hr)	0.23
					Infiltration Factor (cfs/acre)	0.28
					Percent Impervious	90
Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor						**5.52**

1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

* The last collector area assumes a 50% reduction in the proposed development area due to stormwater runoff that is mitigated by proposed onsite stormwater infiltration devices.

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Placer County Flood Control and Water Conservation District
Small Watershed Peak Flow Worksheet

Date	7/29/2011
Engineer	Jack Norberg
Project	Homewood Mountain Resort - Winter Calculations
Watershed	Proposed Conditions WS-7

Area (acres)	145.7	Elevation (ft)	7465	Return Period (years)	100

	Length (ft)	Slope (ft/ft)	Manning's n value	Contributing Area (acres)	Side Slope (ft/ft)	Response Time (minutes)
Overland Flow	500	0.18	0.4			14.26
Collector 1	4308	0.27	0.1	145.7	15	5.24
Collector 2						
Collector 3						

Total Response Time (minutes)	19.50
Unit Peak Flow (cfs/acre)	1.70
Infiltration Rate (in/hr)	0.28
Infiltration Factor (cfs/acre)	0.33
Percent Impervious	90
Watershed Peak Flow (cfs): Area x Unit Peak Flow-(1-Percent Impervious) x Area x Infiltration Factor	**242.84**

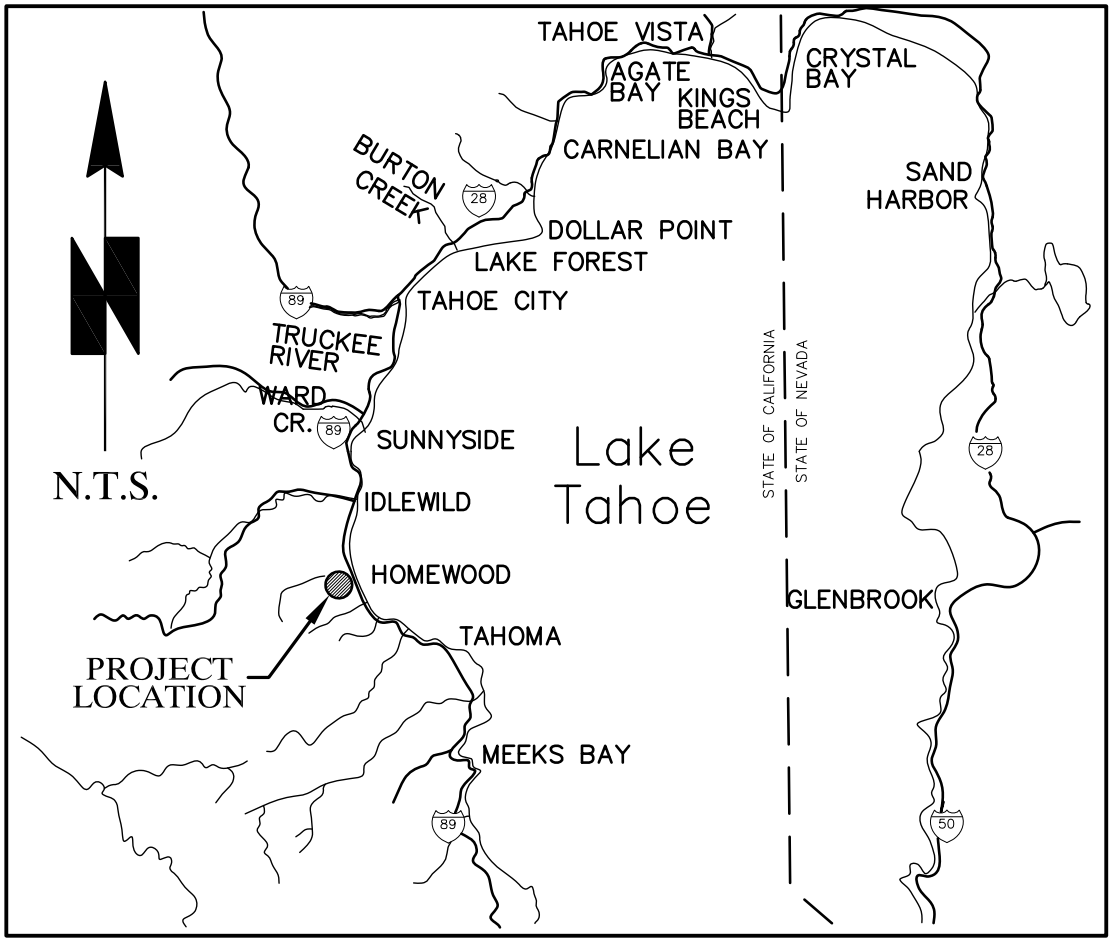
1. Manning's n Values taken from Placer County, Storm Water Management Manual (SWMM), Table 5-5. Woods with some Underbrush - Low = 0.4

2. Percent Impervious taken from Placer County, Storm Water Management Manual (SWMM), Table 5-4 "Snow Covered Areas" Elevation 6,500 feet East = 90%

3. Infiltration Rates taken from Placer County, Storm Water Management Manual (SWMM), Table 5-3, for Hydrologic Soil Groups with Good Woodland- Coniferous Cover (A = 0.53, B = 0.26, C = 0.15, D = 0.11) and Streets and Roads (A = 0.07, B = 0.06).

Appendix C

Figures



VICINITY MAP

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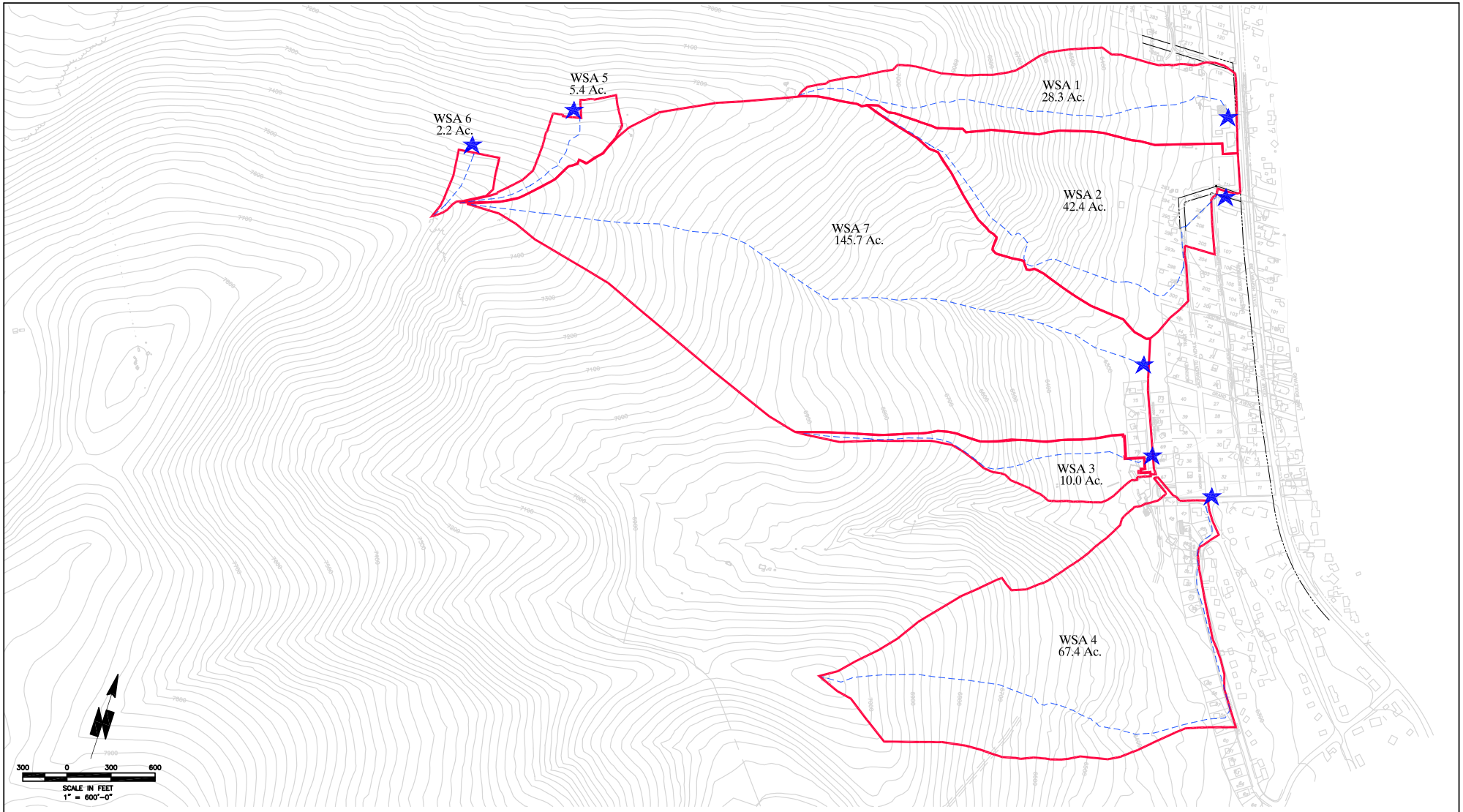
VICINITY/SITE MAP
HOMEWOOD MOUNTAIN RESORT
PLACER COUNTY
CALIFORNIA

FIGURE 1

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
CKC	A514.02.14		JULY 2011		



LEGEND

- FLOW PATH
- WATERSHED BOUNDARY
- CONCENTRATION POINT

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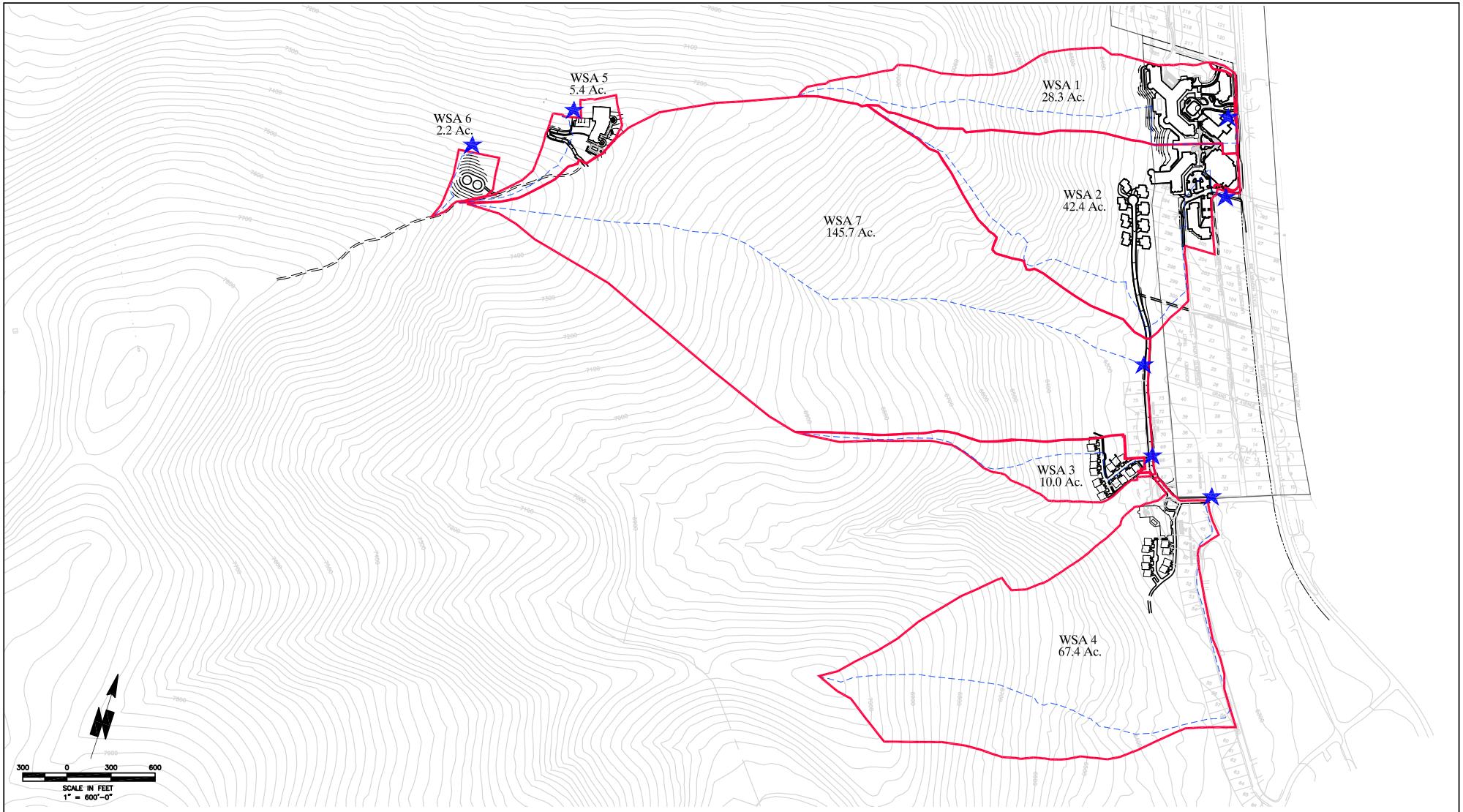
Reno, NV 89509
(775) 329-4955

HOMEWOOD MOUNTAIN RESORT
EXISTING CONDITIONS
WATERSHED AREAS

SHEET 2

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
CKC	A514.02.14		JULY 2011	



LEGEND

- FLOW PATH
- WATERSHED BOUNDARY
- CONCENTRATION POINT

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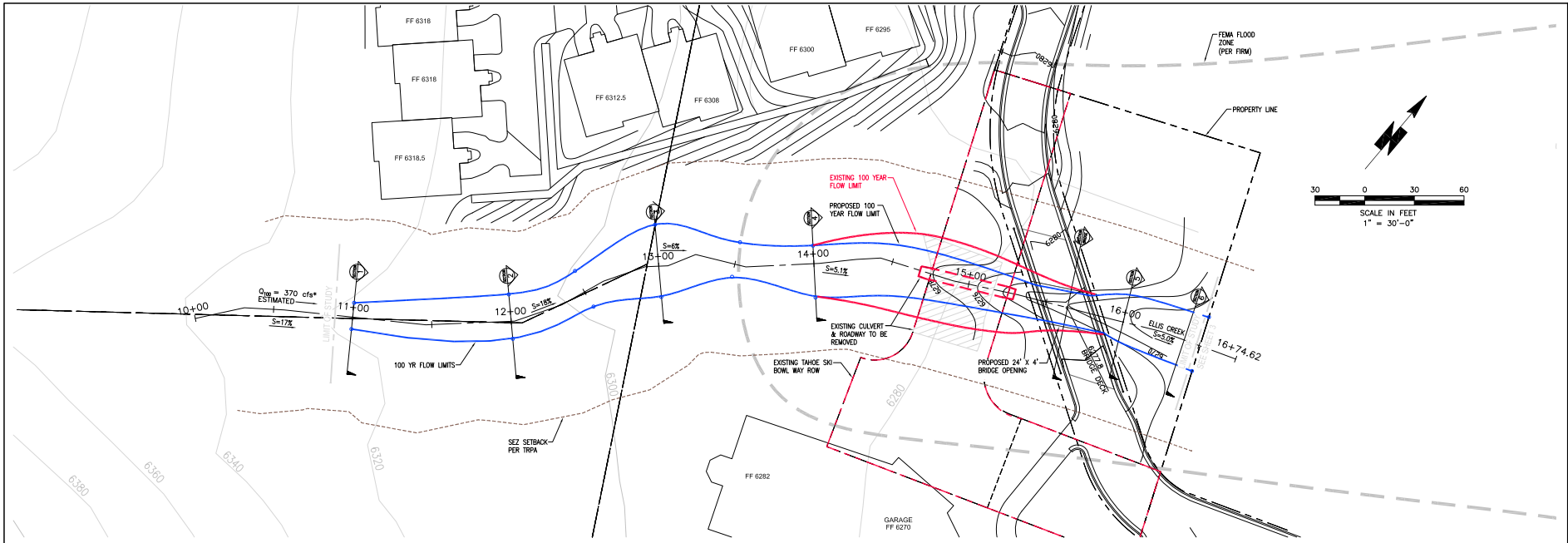
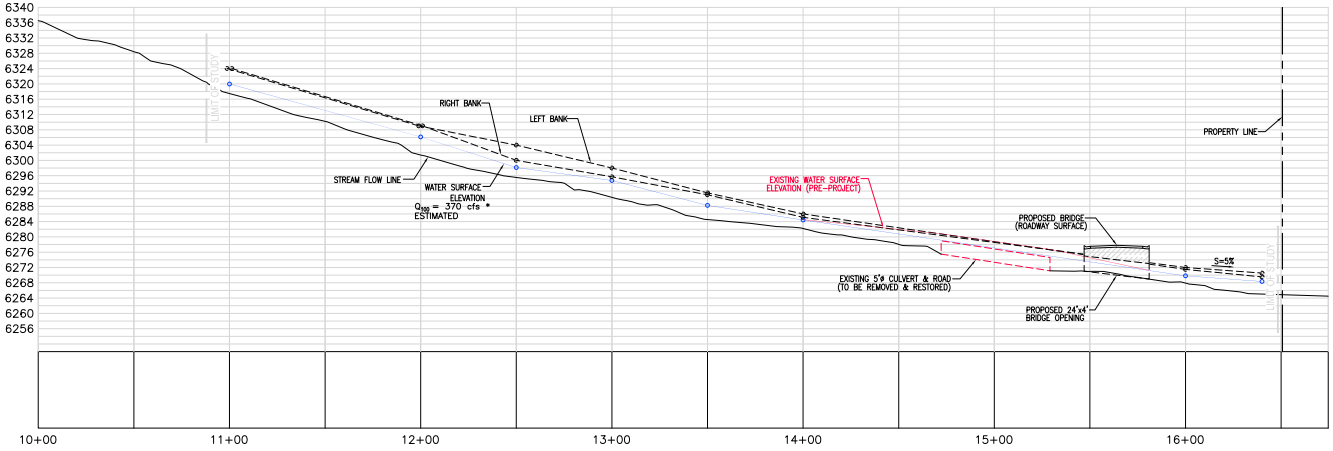
HOMEWOOD MOUNTAIN RESORT
PROPOSED DEVELOPMENT
WATERSHED AREAS

SHEET 3

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
CKC	A514.02.14		JULY 2011	





SCALE:
HORIZONTAL: 1" = 30'
VERTICAL: 1" = 15'

NOTES
100 YEAR PEAK FLOW ESTIMATED FROM COMPARISON WATERSHED (1997 FLOOD FOR WARD/BLACKWOOD CREEK AT 465 cfs/ONE SQUARE MILE OF WATERSHED AREA). THIS INFORMATION WAS PROVIDED BY PLACER COUNTY FLOOD CONTROL DISTRICT. TOTAL ESTIMATED WATERSHED AREA FOR HOMEWOOD CREEK CONTRIBUTING AT PROJECT DEVELOPMENT BOUNDARY IS 506 ACRES WHICH YIELDS AN ESTIMATED FLOW OF 370 cfs FOR THE PURPOSES OF THIS CHANNEL ANALYSIS.

FOR REVIEW ONLY
NOT FOR CONSTRUCTION
DATE: 07/29/2011

DATE:_____

REVISIONS

No.	Date	CHKD	APPD

DESIGNED: CKC
DRAFT: CKC
CHECKED:
JOB No: A514.02.14
SCALE: AS NOTED
DATE: 07/29/2011

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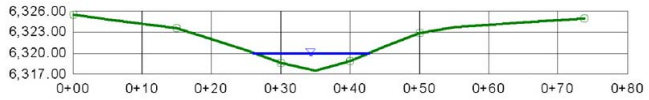
HOMEWOOD VILLAGE RESORTS, LLC

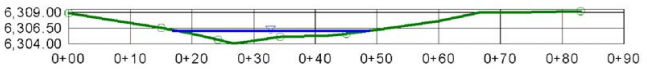
HOMEWOOD VILLAGE RESORTS, LLC
P.O. BOX 3938
TRUCKEE, CALIFORNIA 96160

SOUTH BASE
ELLIS CREEK CHANNEL
PLAN & PROFILE

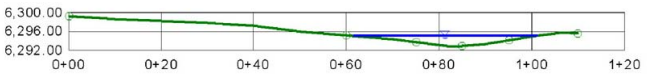
SHEET 1 OF 3



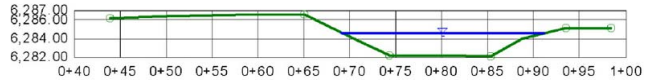
CHANNEL CROSS SECTION – STA: 11+00 (SECTION 1)
MAX. WATER SURFACE ELEV: 6319.97
MAX. WATER VELOCITY: 15.91 ft/s
Q_{100}=370 CFS



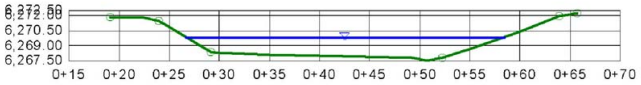
CHANNEL CROSS SECTION – STA: 12+00 (SECTION 2)
MAX. WATER SURFACE ELEV: 6306.14
MAX. WATER VELOCITY: 12.11 ft/s
Q_{100}=370 CFS



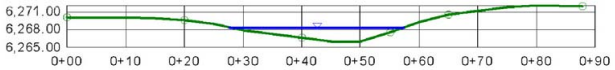
CHANNEL CROSS SECTION – STA: 13+00 (SECTION 3)
MAX. WATER SURFACE ELEV: 6295.04
MAX. WATER VELOCITY: 7.85 ft/s
Q_{100}=370 CFS



CHANNEL CROSS SECTION – STA: 14+00 (SECTION 4)
MAX. WATER SURFACE ELEV: 6284.57
MAX. WATER VELOCITY: 9.59 ft/s
Q_{100}=370 CFS

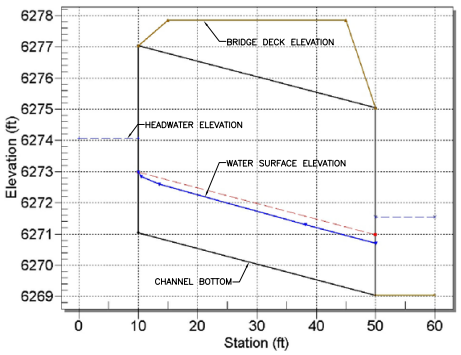


CHANNEL CROSS SECTION – STA: 15+00 (SECTION 5)
MAX. WATER SURFACE ELEV: 6269.82
MAX. WATER VELOCITY: 7.16 ft/s
Q_{100}=370 CFS



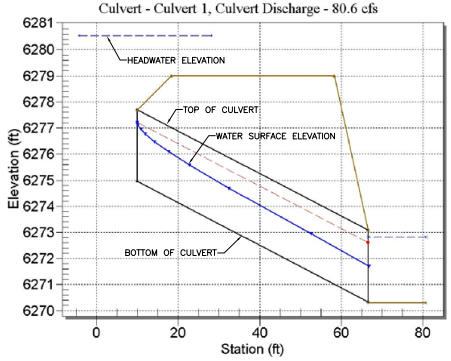
CHANNEL CROSS SECTION – STA: 16+40 (SECTION 6)
MAX. WATER SURFACE ELEV: 6268.35
MAX. WATER VELOCITY: 8.52 ft/s
Q_{100}=370 CFS

Crossing - Proposed Homewood Bridge (bottomless), Design Discharge - 370.0 cfs



CHANNEL CROSS SECTION AT PROPOSED BRIDGE (SECTION BRIDGE)
HEADWATER ELEV: 6274.02
OUTLET VELOCITY: 9.26 ft/s
TAILWATER VELOCITY: 8.46 ft/s
Q_{100}=370 CFS

Crossing - Ex Homewood Creek, Design Discharge - 370.0 cfs
Culvert - Culvert 1, Culvert Discharge - 80.6 cfs



CHANNEL CROSS SECTION AT EXISTING CULVERT (SECTION CULVERT)
HEADWATER ELEV: 6280.54
OUTLET VELOCITY: 15.919 ft/s
TAILWATER VELOCITY: 10.664 ft/s
Q_{100}=370 CFS

FOR REVIEW ONLY
NOT FOR CONSTRUCTION
DATE: 07/29/2011

DATE:_____

REVISIONS

No.	Date	CHKD	APPD

DESIGNED: CKC
DRAFT: CKC
CHECKED:
JOB No. 1514.02.14
SCALE: AS NOTED
DATE: 07/29/2011

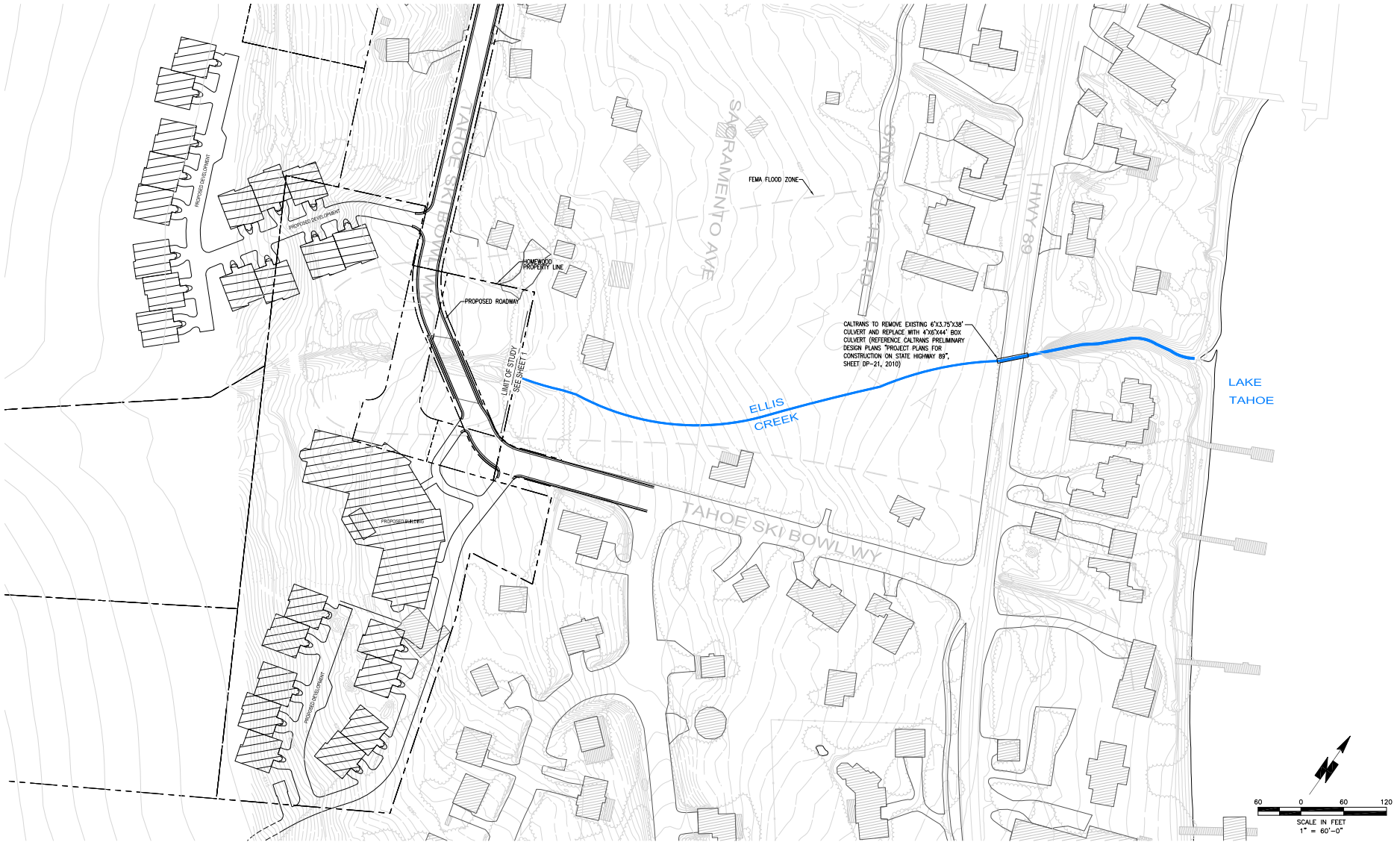
Nichols Consulting Engineers, Chtd.
Engineering & Environmental Services
1885 S. Arlington Ave., Suite #111
Reno, NV 89509
Ph: (775) 786-4565
Fx: (775) 324-5098

HOMEWOOD VILLAGE RESORTS, LLC

HOMEWOOD VILLAGE RESORTS, LLC
P.O. BOX 3938
TRUCKEE, CALIFORNIA 96160

SOUTH BASE
STREAM DAYLIGHTING
CROSS SECTIONS

SHEET 2 OF 3



NOTE
MAPPING & TOPO BY TRISTATE SURVEYING LTD.

FOR REVIEW ONLY
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DATE: 07/29/2011

DATE:_____

REVISIONS

No.	Date	CHKD	APPD

DESIGNED: CKC
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SOUTH BASE
ELLIS CREEK
AREA MAPPING

SHEET 3 OF 3

Appendix D

Ellis Creek Channel Analysis

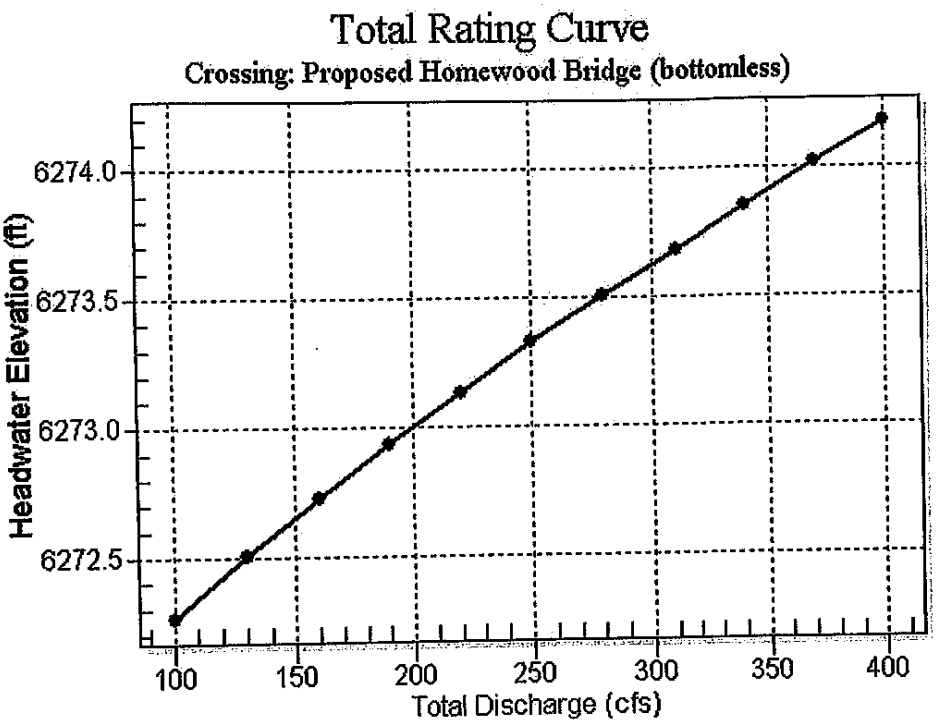
Table 1 - Summary of Culvert Flows at Crossing: Proposed Homewood Bridge

Headwater Elevation (ft)	Total Discharge (cfs)	Prop. Culvert Discharge (cfs)	Roadway Discharge (cfs)	Iterations
6272.27	100.00	100.00	0.00	1
6272.51	130.00	130.00	0.00	1
6272.73	160.00	160.00	0.00	1
6272.94	190.00	190.00	0.00	1
6273.14	220.00	220.00	0.00	1
6273.33	250.00	250.00	0.00	1
6273.51	280.00	280.00	0.00	1
6273.68	310.00	310.00	0.00	1
6273.85	340.00	340.00	0.00	1
6274.02	370.00	370.00	0.00	1
6274.18	400.00	400.00	0.00	1
6277.80	1114.98	1114.98	0.00	Overtopping

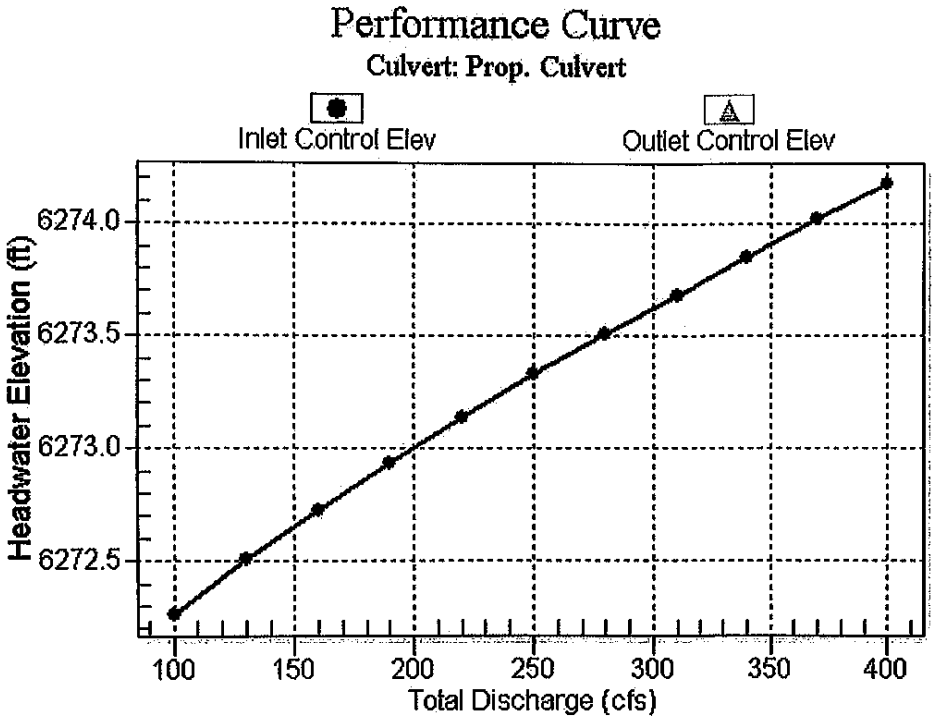
Table 2 - Culvert Summary Table: Prop. Culvert

Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
100.00	100.00	6272.27	1.265	0.0*	1-S2n	0.732	0.790	0.740	1.388	5.628	6.034
130.00	130.00	6272.51	1.506	0.0*	1-S2n	0.855	0.945	0.875	1.567	6.185	6.461
160.00	160.00	6272.73	1.727	0.0*	1-S2n	0.978	1.100	0.990	1.723	6.726	6.819
190.00	190.00	6272.94	1.936	0.0*	1-S2n	1.101	1.243	1.103	1.862	7.172	7.128
220.00	220.00	6273.14	2.136	0.0*	1-S2n	1.217	1.363	1.222	1.989	7.499	7.402
250.00	250.00	6273.33	2.327	0.0*	1-S2n	1.305	1.482	1.305	2.105	7.977	7.649
280.00	280.00	6273.51	2.509	0.0*	1-S2n	1.393	1.602	1.401	2.213	8.324	7.874
310.00	310.00	6273.68	2.684	0.0*	1-S2n	1.481	1.722	1.462	2.315	8.715	8.081
340.00	340.00	6273.85	2.855	0.0*	1-S2n	1.570	1.835	1.575	2.410	8.994	8.274
370.00	370.00	6274.02	3.021	0.0*	1-S2n	1.658	1.936	1.665	2.500	9.260	8.455
400.00	400.00	6274.18	3.179	0.0*	1-S2n	1.746	2.036	1.746	2.587	9.543	8.623

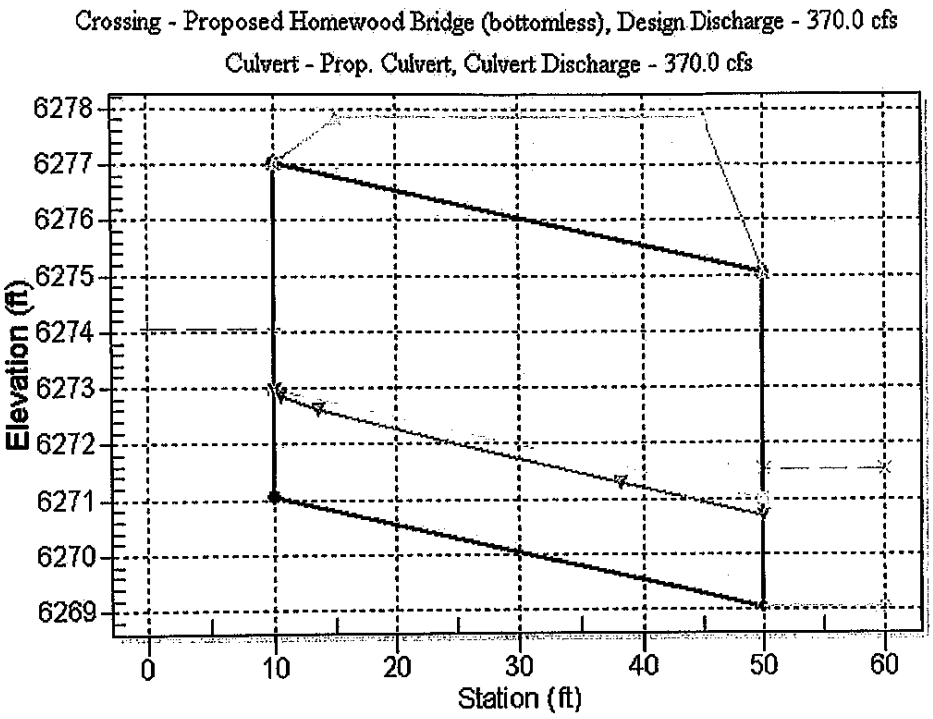
Rating Curve Plot for Crossing: Proposed Homewood Bridge (bottomless)



Culvert Performance Curve Plot: Prop. Culvert



Water Surface Profile Plot for Culvert: Prop. Culvert



Site Data - Prop. Culvert

Site Data Option: Culvert Invert Data

Inlet Station: 10.00 ft

Inlet Elevation: 6271.00 ft

Outlet Station: 50.00 ft

Outlet Elevation: 6269.00 ft

Number of Barrels: 1

Culvert Data Summary - Prop. Culvert

Barrel Shape: Arch-Box, Concrete

Barrel Span: 24.00 ft

Barrel Rise: 6.00 ft

Barrel Material: Concrete

Embedment: 0.00 in

Barrel Manning's n: 0.0150 (top and sides)

Manning's n: 0.0500 (bottom)

Inlet Type: Conventional

Inlet Edge Condition: Square Edge with Headwall

Inlet Depression: NONE

Table 3 - Downstream Channel Rating Curve (Crossing: Proposed Homewood

Flow (cfs)	Water Surface Elev (ft)	Depth (ft)	Velocity (ft/s)	Shear (psf)	Froude Number
100.00	6270.39	1.39	6.03	4.33	1.13
130.00	6270.57	1.57	6.46	4.89	1.15
160.00	6270.72	1.72	6.82	5.38	1.17
190.00	6270.86	1.86	7.13	5.81	1.18
220.00	6270.99	1.99	7.40	6.21	1.19
250.00	6271.11	2.11	7.65	6.57	1.20
280.00	6271.21	2.21	7.87	6.91	1.21
310.00	6271.31	2.31	8.08	7.22	1.22
340.00	6271.41	2.41	8.27	7.52	1.23
370.00	6271.50	2.50	8.45	7.80	1.23
400.00	6271.59	2.59	8.62	8.07	1.24

Tailwater Channel Data - Proposed Homewood Bridge (bottomless)

Tailwater Channel Option: Trapezoidal Channel

Bottom Width: 5.00 ft

Side Slope (H:V): 5.00 (_:1)

Channel Slope: 0.0500

Channel Manning's n: 0.0500

Channel Invert Elevation: 6269.00 ft

Roadway Data for Crossing: Proposed Homewood Bridge (bottomless)

Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 25.00 ft

Crest Elevation: 6277.80 ft

Roadway Surface: Paved

Roadway Top Width: 30.00 ft

Crossing: Proposed Homewood Bridge (bottomless), Culvert: Prop. Culvert

Front View (Not to scale)